

REMARKS

This amendment is filed along with a Request for Continued Examination. The application has been amended in a manner to place it in condition for allowance.

Status of the Claims

Claims 9 and 16 are amended to recite the proportion of conductive fibers as suggested in Official Action. Support for this amendment may be found, for example, the paragraph bridging pages 4 and 5, and paragraphs 1 and 2 of page 4.

Support for new claims 19-21 may be found, for example, at page 4, paragraph 2 and the paragraph bridging pages 4 and 5, page 5, paragraphs 2-3.

All three independent claims recite that the metal compound consists essentially of a metal, e.g., as described in the first (partial) paragraph of page 4. That is, this claim language excludes other components from the claimed metallic hybrid that would materially affect the characteristics of the claimed invention. As discussed on page 5, paragraphs 2-4, the claimed metal compounds when combined with conductive filler are fused to provide a conductivity that is maintained after cooling.

No new matter is believed to have been added by the above claim amendments.

Claim 10 and 15 are cancelled.

Claims 9, 11-14 and 16-21 remain pending in the application.

Claim Rejections-35 USC §112

Claims 9-18 were rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. This rejection is respectfully traversed.

The position of the Official Action was that the specification discloses the amount of conductive filler present as 30-70%, 33-68% and 35-68%.

Claims 9 and 16 are amended in this manner.

New claim 19 recites a conductive filler amount consistent with the paragraph bridging pages 4 and 5 of the originally filed specification.

Therefore, the claims do comply with the written description requirement, and withdrawal of the rejection is respectfully requested.

Claim Rejections-35 USC §102

Claims 9-18 were rejected under 35 U.S.C. § 102(b) as anticipated by IWASE US 4,882,227 ("IWASE"). This rejection is respectfully traversed.

IWASE was offered for teaching a composition comprising a polymer and a conductive filler material comprising a low melting point metal compound and electric conductive fibers.

However, IWASE neither discloses nor suggests the metal/plastic hybrid as now described in independent claims 9, 16 and 19.

Most significantly, IWASE requires lead in the low melting alloy.

The purpose of the claimed low melting metal compound, which is intended to avoid toxicity, e.g., see specification page 4, paragraph 2. Indeed, claim 19 explicitly recites a lead-free metal compound melting in the range between 100°C and 400°C, and claims 9 and 16 are directed to a metal compound melting in the range between 100°C and 400°C selected from the group consisting of bismuth, zinc, tin and combinations thereof.

Thus, IWASE not only fails to anticipate the independent claims 9, 16, and 19, as well as the dependent claims 11-14, 17, 18, 20 and 21, but IWASE would also fail to render obvious these claims, in order to even approach the claimed invention would require a modification contrary to the requirements of IWASE.

Therefore, withdrawal of the rejection is respectfully requested.

Claims 9-10 and 12-17 were rejected under 35 U.S.C. § 102(b) as anticipated by ITO US 4,582,661 ("ITO"). This rejection is respectfully traversed.

ITO was offered for teaching a composition comprising a thermoplastic embedding material, metallic fibers, and a stabilizing material. The position maintained in Official Action was that a stabilizer with a metal and an organic compound, e.g., dibutyltin maleate, taught by ITO reads on the claimed metal compound.

However, the independent claims 9, 16 and 19 explicitly recite that the metal compound consists essentially of metals. The stabilizer of ITO, however, is a metal/organic compound complex. The presence of organic material in such a structure would material affect the properties of the metal in a way that it would not be suitable for use with the claimed invention.

Furthermore, with respect to claim 19 in particular, there is no teaching that the stabilizer is fused to an electroconductive filler to form a network.

Thus, ITO does not anticipate claims 9, 16, and 19, as well as the dependent claims 11-14, 17, 18, 20 and 21. Moreover, ITO would fail to render obvious the claimed invention, as there is the stabilizer is required for the resin.

Therefore, withdrawal of the rejection is respectfully requested.

Claims 9-18 were rejected under 35 U.S.C. § 102(b) as anticipated by KATSUMATA US 5,554,678 ("KATSUMATA"). This rejection is traversed.

KATSUMATA discloses a resin material that includes a carbonaceous material, which the Official Action considers to read on the claimed conductive filler.

However, KATSUMATA fails to disclose or suggest that the conductive material fibers or particles consist of copper. KATSUMATA requires other conductive fibers, namely the carbonaceous material. Thus, KATSUMATA fails to disclose or suggest the features of claims 9 and 16.

Furthermore, KATSUMATA discloses that "when the conductive fiber is more than 30 weight %, the moldability deteriorates to result in an uneven dispersion of the fibers, which than cannot provide a practical molded article." (Emphasis added.) As such, KATSUMATA fails to disclose a metal/hybrid plastic in which the electrically conducting and/or metallic filler is present in the form of a conductive fiber and/or particle in a proportion of between 30% and 70%, as recited in claim 19. Thus, KATSUMATA also fails to disclose or suggest the features of claim 19.

Therefore, KATUMATA fails to anticipate, or even render obvious, claims 9, 16, and 19, and all claims dependent thereon, and withdrawal of the rejection is respectfully requested.

Conclusion

In view of the amendment to the claims and the foregoing remarks, this application is in condition for allowance

at the time of the next Official Action. Allowance and passage to issue on that basis is respectfully requested.

Should there be any matters that need to be resolved in the present application, the Examiner is respectfully requested to contact the undersigned at the telephone number listed below.

The Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to our credit card which is being paid online simultaneously herewith for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17.

Respectfully submitted,

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